UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2008*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,15-27 and 30-41* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,15-27,30-39 and 41* is/are rejected.

7)☒ Claim(s) *40* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

This office action is responsive to communications filed on December 17, 2008.

Claims 1 and 17 have been amended. Claims 1-12, 15-27 and 30-41 are pending in the

application.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-15, 17-30, 32-39 and 41 are rejected under 35 U.S.C. 102(e) as being

anticipated by Hasink et al. (US 2005/0149932).

Regarding Claim 1, Hasink teaches a method comprising:

receiving, by an application executed by an operating system, a plurality of

operating parameters having values describing a plurality of resources of a client device

(*"Embodiments of the present invention can be used with numerous different operating*

systems" – See [0020]; *"an operating system 118, running a foreground process 120*

and a background process 122 (such as an index process)" – See [0051]; *"a*

background process running at idle priority uses performance counters, optionally

including one or more of the counters discussed above, and/or other mechanisms to

determine the immediate load on a resource, such as a magnetic or optical mass

storage device, it wishes to use" – See [0024]; *"The determination can take into account*

the processor or central processing unit (CPU) load, as measured by the time spent in

the idle loop, as well as the load on other shared system resources, such as disk drives"

– See [0018]; *"By way of example, the background process checks a performance*

counter, such as the counter named "\\PhysicalDisk\Current Disk Queue Length" for the

specific disk drive instance it wishes to read from or write to. Alternatively or in addition,

the background process can access the aggregate total value of the current disk queue

lengths for all of the physical disk drives, whose instance is known as "_Total".

Advantageously, this is easier than keeping track of which disk drive the process is

about to access and checking only that one drive's queue length" – See [0029]; The

queue lengths (operating parameters) of each physical drive (resource) are monitored

using the performance counters);

determining a value representing a performance measure of the client device

based at least in part on a combination of the plurality of operating parameter values

describing the plurality of resources of the client device (*"Alternatively or in addition, the*

background process can access the aggregate total value of the current disk queue

lengths for all of the physical disk drives, whose instance is known as "_Total""– See

[0029]; The queue lengths of each physical drive are combined into the "Total"

parameter. Thus, the usage levels of a plurality of resources (physical drives) are

aggregated into a single performance counter);

assigning the value representing the performance measure to a usage variable (As mentioned above, the aggregate total of the queue lengths of all the physical disk drives is assigned to the "Total" performance counter); and

correlating by the application a resource usage level of the application with the usage variable, the correlating comprising the application modifying its own execution based at least in part on a change to the value assigned to the usage variable (*"If the value has changed, the background process uses this as an indication that another process has used the disk in the interim and is possibly still using the disk, and so backs off and waits for an additional period or periods of time"* – See [0037]).

Regarding Claims 2 and 18, Hasink teaches correlating by the application the resource usage level of the application with the usage variable comprising the application suspending one or more operations when the value assigned to the usage variable exceeds a threshold (*"When the counter value is non-zero, or greater than a designated threshold, the background process waits a designated amount of time, such as 10 milliseconds, before checking again"* – See [0031]).

Regarding Claims 3 and 19, Hasink teaches correlating by the application the resource usage level of the application with the usage variable comprising the application performing an activity affecting a usage variable proximate to a time that the value assigned to the usage variable indicates an existing activity (*"The background process then waits a given amount of time, such as, by way of example, 10*

milliseconds, and checks for pending disk or mass storage I/O by checking the "current

disk queue length" counter, or other appropriate performance indicator" – See [0031];

"When the counter value is non-zero, or greater than a designated threshold, the

background process waits a designated amount of time, such as 10 milliseconds, before

checking again" – See [0031]; The background process (application) will wait a

designated amount of time to access a resource (i.e., hard disk) if the resource is

already being accessed by another application, before trying to access the resource

again).

Regarding Claims 4 and 20, Hasink teaches correlating by the application the

resource usage level of the application with the usage variable comprising the

application adjusting a rate of operation based at least in part on the value assigned to

the usage variable (*"The background process can then determine when idle cycles are*

being allocated to the background process because another process, such as a

foreground process, is waiting for an operation on that same resource to complete. In

such cases, the background process optionally refrains from imposing an additional

load on the resource, so that the other process can run without delay" – See [0024]).

Regarding Claims 5 and 21, Hasink teaches correlating by an application the

resource usage level of the application with the usage variable comprising the

application adjusting a sequence of operations based at least in part on the value

assigned to the usage variable (*"An embodiment optionally utilizes a background*

process which performs indexing of the contents of a user's hard disk without impacting

system performance under Windows-NT based operating systems to an extent that

would be readily noticeable by a user. The indexing process performs many disk I/O

operations when indexing the contents of the user's hard disk to allow the user to rapidly

find files which contain certain words, phrases, or strings" – See [0025]; *"In addition, the*

index engine can refrain from indexing until it determines that the mass storage device,

which stores the data or files to be indexed, is not being utilized by a higher priority or

foreground process" – See [0027]; The sequence of indexing a client device's hard disk

is adjusted based on whether or not other higher priority processes are simultaneously

trying to access the hard disk as indicated by the current value of one or more of the

performance counters shown in Table 1).

Regarding Claims 6 and 22, Hasink teaches correlating by the application the

resource usage level of the application with the usage variable comprising the

application adjusting an active feature based at least in part on the value assigned to

the usage variable (*"An embodiment optionally utilizes a background process which*

performs indexing of the contents of a user's hard disk without impacting system

performance under Windows-NT based operating systems to an extent that would be

readily noticeable by a user. The indexing process performs many disk I/O operations

when indexing the contents of the user's hard disk to allow the user to rapidly find files

which contain certain words, phrases, or strings" – See [0025]; *"In addition, the index*

engine can refrain from indexing until it determines that the mass storage device, which

stores the data or files to be indexed, is not being utilized by a higher priority or

foreground process" – See [0027]; The active feature of the background process

(application) which is responsible for indexing a client device's hard disk is adjusted

when the application refrains from attempting to access the hard drive when other

higher priority processes are simultaneously trying to access the hard disk).

Regarding Claims 7 and 23, Hasink teaches the client device (Computer 102 –

See Fig. 1) comprising a client processor (CPU 104 – See Fig. 1) and a client memory

storage device (Memory 116 – See Fig. 1).

Regarding Claims 8 and 32, Hasink teaches receiving the plurality of operating

parameters comprising monitoring at least one of the operating parameters (*"the*

background process checks a performance counter, such as the counter named

"\\PhysicalDisk\Current Disk Queue Length" for the specific disk drive instance it wishes

to read from or write to" – See [0029]).

Regarding Claims 9 and 24, Hasink teaches monitoring a period of inactivity of

the client device (*"After the second predetermined time period has elapsed, a*

determination is made as to whether the computer resource is idle" – See Abstract).

Regarding Claims 10 and 25, Hasink teaches receiving the plurality of operating

parameters comprising receiving at least one of the operating parameters during an

initial load of the client processor (*"Embodiments of the present invention determine*

when a computer and/or resource therein is idle. The determination can take into

account the processor or central processing unit (CPU) load" – See [0018]).

Regarding Claims 11 and 26, Hasink teaches receiving the plurality of operating

parameters comprising receiving at least one of the operating parameters during a

predetermined time interval (*"The background process checks the value of this counter*

before and after an interval, such as the 10 millisecond wait interval described above" –

See [0037]).

Regarding Claims 12 and 27, Hasink teaches the plurality of operating

parameters comprising a client processor load (*"Embodiments of the present invention*

determine when a computer and/or resource therein is idle. The determination can take

into account the processor or central processing unit (CPU) load" – See [0018]).

Regarding Claims 15 and 30, Hasink teaches the method of Claim 7 further

comprising writing to a computer readable medium of the client memory storage device

(*"while running, the indexing process is constantly reading from and writing to the user's*

hard disk" – See [0009]).

Regarding Claim 17, Hasink teaches a computer readable storage medium

comprising instructions (*"FIG. 1 depicts a computer system 100, including a computer*

102, an operating system 118, running a foreground process 120 and a background

process 122 (such as an index process) in memory 116, which can be random access

memory (RAM), coupled to a CPU (central processing unit) 104 via a memory bus 114,

a disk controller 106 coupled to the CPU 104 via peripheral bus 112, one or more mass

storage devices 108, including one or more of magnetic hard disk drives, optical drives,

solid state non-volatile memory, or the like" – See [0051]), that, when executed, cause

an application to perform the steps of:

receiving, by an application executed by an operating system, a plurality of

operating parameters having values describing a plurality of resources of a client device

(*"Embodiments of the present invention can be used with numerous different operating*

systems" – See [0020]; *"an operating system 118, running a foreground process 120*

and a background process 122 (such as an index process)" – See [0051]; *"a*

background process running at idle priority uses performance counters, optionally

including one or more of the counters discussed above, and/or other mechanisms to

determine the immediate load on a resource, such as a magnetic or optical mass

storage device, it wishes to use" – See [0024]; *"The determination can take into account*

the processor or central processing unit (CPU) load, as measured by the time spent in

the idle loop, as well as the load on other shared system resources, such as disk drives"

– See [0018]; *"By way of example, the background process checks a performance*

counter, such as the counter named "\\PhysicalDisk\Current Disk Queue Length" for the

specific disk drive instance it wishes to read from or write to. Alternatively or in addition,

the background process can access the aggregate total value of the current disk queue

lengths for all of the physical disk drives, whose instance is known as "_Total".

Advantageously, this is easier than keeping track of which disk drive the process is

about to access and checking only that one drive's queue length" – See [0029]);

determining a value representing a performance measure of the client device

based at least in part on a combination of the plurality of operating parameter values

describing the plurality of resources of the client device (*"Alternatively or in addition, the*

background process can access the aggregate total value of the current disk queue

lengths for all of the physical disk drives, whose instance is known as "_Total"" – See

[0029]; The queue lengths of each physical drive are combined into the "Total"

parameter. Thus, the usage levels of a plurality of resources (physical drives) are

aggregated into a single performance counter);

assigning the value representing the performance measure to a usage variable

(As mentioned above, the aggregate total of the queue lengths of all the physical disk

drives is assigned to the "Total" performance counter); and

correlating by the application a resource usage level of the application with the

usage variable, the correlating comprising the application modifying its own execution

based at least in part on a change to the value assigned to the usage variable (*"If the*

value has changed, the background process uses this as an indication that another

process has used the disk in the interim and is possibly still using the disk, and so backs

off and waits for an additional period or periods of time" – See [0037]).

Regarding Claim 33, Hasink teaches the usage variable being a quantitative

performance measure of the client device (Table 1 shows the various counters that may

be monitored. Note that the counters shown in Table 1 are quantitative performance

measurements, such as "% idle time" or "Disk Bytes/sec").

Regarding Claim 34, Hasink teaches the usage variable being a qualitative

performance measure of the client device (*"the background process checks a*

performance counter, such as the counter named "\\PhysicalDisk\Current Disk Queue

Length" for the specific disk drive instance it wishes to read from or write to" – See

[0029]; *"a check of the "current disk queue length" performance counter may not be, on*

its own, adequate or sufficient to allow a background process to determine whether or

not another process is using the disk drive, because a queued operation might be on

behalf the background process itself" – See [0030]; One performance counter shown in

Table 1 is "Current Disk Queue Length". While this value is a number, it does not

directly and numerically indicate a performance measure).

Regarding Claim 35, Hasink teaches the application modifying its own execution

comprising the application throttling back its usage of the client device (*"The*

background process can then determine when idle cycles are being allocated to the

background process because another process, such as a foreground process, is waiting

for an operation on that same resource to complete. In such cases, the background

process optionally refrains from imposing an additional load on the resource, so that the

other process can run without delay" – See [0024]).

Regarding Claim 36, Hasink teaches the application dynamically modifying its

own execution based on dynamic changes to the value assigned to the usage variable

(*"If the value has changed, the background process uses this as an indication that*

another process has used the disk in the interim and is possibly still using the disk, and

so backs off and waits for an additional period or periods of time, such as additional 10

millisecond intervals, until the counter value stops changing" – See [0037]).

Regarding Claim 37, Hasink teaches the application modifying its own execution

comprising the application pausing between execution of resource-intensive

calculations (*"at state 316 the background process waits a designated period of time,*

such as 10 msec. At state 318, a determination is then made as to whether the disk is in

use" – See [0054]).

Regarding Claim 38, Hasink teaches a resource used by the application being

memory (Memory 116 – See Fig. 1) and wherein the application modifying its own

execution comprises the application dynamically scaling back its memory usage based

on dynamic changes to the value assigned to the usage variable (The example given

above deals with the background process (application) modifying its own execution with

regard to accessing one or more hard disks. Hard disks are a type of memory and the

usage of the hard disk by the application includes performing "seeks" for data on the

hard disk during the indexing procedure (also mentioned above)).

Regarding Claim 39, Hasink teaches a resource used by the application being

network bandwidth (*"Similarly, the above techniques can be applied to a shared network

with limited bandwidth"* – See [0050]) and wherein the application modifying its own

execution comprises the application throttling-back usage of network bandwidth based

on dynamic changes to the value assigned to the usage variable (*"there may be multiple

processes trying to access the Internet, and use of the foregoing techniques avoid

having a background process slow down a transfer being made by a foreground

process"* – See [0050]).

Regarding Claim 41, Hasink teaches a plurality of usage variables (See Table 1)

and wherein the correlating comprises the application modifying its own execution

based at least in part on changes to values assigned to the plurality of usage variables

(*"In an example embodiment, a background process running at idle priority uses

performance counters, optionally including one or more of the counters discussed

above, and/or other mechanisms to determine the immediate load on a resource, such

as a magnetic or optical mass storage device, it wishes to use"* – See [0024]).

Claim Rejections - 35 USC § 103

3.　　The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.　　Claims 16 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Hasink et al. (US 2005/0149932) in view of Anderson, II et al. (US 5,909,544).

　　　　Regarding Claims 16 and 31, Hasink does not explicitly teach the plurality of

operating parameters comprising a first parameter and a second parameter, <u>wherein

the first parameter comprises a speed of the client processor and the second parameter

comprises a capacity of the client memory storage device</u>.

　　　　However, Anderson does teach the operating parameter comprising a first

parameter and a second parameter, the first parameter comprising a speed of the client

processor and the second parameter comprising a capacity of the client memory

storage device (*"It is an object of the invention to provide a system for tracking and

scheduling of available resource computers connected in a network, including

monitoring such parameters as, for example, the location, name, operating system,

memory, speed, processor characteristics, memory capacity and other operational

characteristics, of each resource computer, and using that information to allocate those

resource computers to run applications, such as for example, test applications and

collect data, such as test data"* – See Col. 4, lines 22-30).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to include processor speed and storage capacity as operating

parameters. One of ordinary skill would have been motivated to do so since Anderson

shows in Col. 4, lines 22-30 that processor speed and memory capacity are among

several parameters that are important to take into consideration when allocating

resources.

Allowable Subject Matter

5.   Claim 40 is objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

Response to Arguments

6.   Applicant's arguments filed on December 17, 2008 have been fully considered

but they are not persuasive.

On page 11 of the remarks, Applicant argues "Hasink does not determine a value

based at least in part on a combination of operating parameters values describing

a plurality of resources of a client device or assign the value to a usage variable."

On page 11 of the remarks, Applicant further argues "Hasink does not determine

'a value representing a performance measure of the client device based at least in

part on a combination of the plurality of operating parameter values describing

the plurality of resources of the client device' or assign 'the value representing

the performance measure to a usage variable' as claimed."

In response to the new subject matter which has been amended into

independent Claims 1 and 17, Examiner has cited material from Hasink which has not

been previously relied upon. Specifically, Examiner has pointed out the "Total"

performance counter disclosed in paragraph [0029] of Hasink which tracks the total

queue length of all physical disk drives. Thus, Hasink teaches determining a value

(total queue length) based at least in part on a combination of operating parameters

values describing a plurality of resources (queue length of each individual physical disk

drive) of a client device and assign the value to a usage variable (the total length is

assigned to the "Total" performance counter mentioned previously).

Conclusion

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Sciacca whose telephone number is (571) 270-1919. The examiner can normally be reached on Monday thru Friday, 7:30 A.M. - 5:00 P.M. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Scott M. Sciacca/
Examiner, Art Unit 2446

/Jeffrey Pwu/
Supervisory Patent Examiner, Art Unit 2446